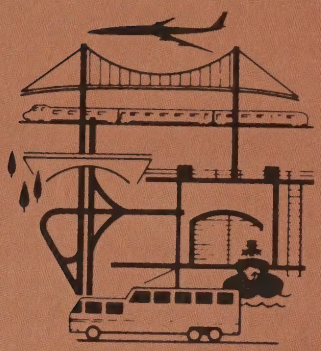
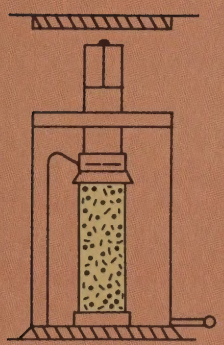
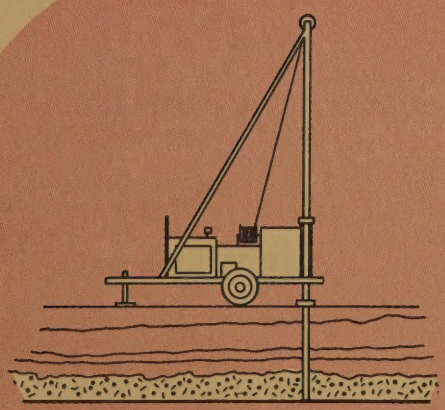
STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION

RAYMOND T. SCHULER, COMMISSIONER

SOIL MECHANICS BUREAU







CONTRACT FILD 72-3
TEST WELL REPORT
INTERSTATE ROUTE 508 (I-88)
SECTIONS .05 & .06
DELAWARE COUNTY

MAY 1973

SM 238b (1/73)

MEMORANDUM
DEPARTMENT OF TRANSPORTATION

DATE May 22, 1973

SUBJECT I-88 SUSQUEHANNA EXPRESSWAY CONTRACT FILD 72-3
DELAWARE COUNTY
TEST WELL REPORT

FROM Lyndon H. Moore, Soil Mechanics Bureau, Room 102, Bldg. 7
By: Wesley P. Moody

TO James K. Connors, Regional Director, Region 9

Enclosed is a copy of a test well report prepared by Mr. Vance Bryant, Senior Engineering Geologist, describing work done under Contract FILD 72-3. Recommendations for the pumping rate and location of pump intake for the various wells are included. Please contact this Bureau if you have any questions concerning this report.

WPM:EMM:MVM
Attachment

NYSDOT
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STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION
SOIL MECHANICS BUREAU

TEST WELL REPORT
FOR

INTERSTATE ROUTE 508 (I-88)
ON
SECTION .05, SIDNEY-UNADILLA; EASTBOUND REST AREA
AND
SECTION .06, UNADILLA-OTEGO; WESTBOUND REST AREA

By

Vance Bryant
Senior Engineering Geologist

May 1973

ABSTRACT

Test wells were constructed under Contract FILD 72-3 for the Eastbound and Westbound Rest Areas on Interstate Route 508 (I-88) in Delaware County. The work was completed in April, 1973.

Drilling and Test Data is included as obtained from records, samples and direct observation.

Recommendations for the pumping rate and location of pump intake, based on these data, are presented.

Included in the Appendices, one per well, are the results of all physical, chemical and bacteriological testing performed by the State Health Department on water samples obtained directly from each well.

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MEMORANDUM
DEPARTMENT OF TRANSPORTATION

DATE May 4, 1973

SUBJECT FILD 72-3
INTERSTATE ROUTE 508 TEST WELLS, SECTIONS .05 & .06
DELAWARE COUNTY, PIN 9357.25 311

FROM Vance Bryant, Senior Engineering Geologist VB

TO Wesley P. Moody, Associate Soils Engineer

Since the initiation of work on the subject contract in October 1972, the writer has assisted Mr. T. Lynch (EIC) of Region No. 9 in supervising construction of the test wells. A combination of subsurface conditions as well as equipment and procedural problems resulted in the need for several extensions of time beyond the original completion date of the contract. Work was completed in April of 1973.

On each site Well No. 1 proved to be the most efficient well with respect to yield and depth of pump setting. As far as water quality is concerned all wells are acceptable for bacteriological, physical and chemical characteristics. Attention is called, however, to chemical results for Eastbound Well No.1&3 and Westbound Well No. 2C. The District Health Office points out the aggressive nature of the water with respect to plumbing fixtures etc. Other details pertinent to well construction, development and testing are too numerous to include in the body of the report. Therefore an appendix for each completed well, excluding EB No. 2, accompanies this report. Since development of the test wells was done by pumping, the pumping data in the appendices do not reflect all of the results obtained. The later, more pertinent, data is presented, however, to provide the basis for the following recommendations.

Specific recommendations regarding maximum rate of pumping and location of the pump intake for each well are as follows:

Eastbound Rest Area

1) Test Well No. 1 - Baseline Station 1985+00; Offset 380 Feet, Right
   a) Pumping Rate - 25 G.P.M.
   b) Pump Intake - 130 Feet below original ground

2) Test Well No. 2 - Baseline Station 1986+50; Offset 520 Feet, Right
   Abandoned-Drilling, Pumping & Test Data for this well are not included in this report but are available upon request.

3) Test Well No. 3 - Baseline Station 1984+80; Offset 372 Feet, Right
   a) Pumping Rate - 10 G.P.M.
   b) Pump Intake -130 Feet below original ground

Westbound Rest Area

1) Test Well No. 1 - Baseline Station 2130+36; Offset 830 Feet, Left
   a) Pumping Rate - 15 G.P.M.
   b) Pump Intake - 150 Feet below original ground

2) Test Well No. 2C - Baseline Station 2131+69 BTPA; Offset 683 Feet, Left
   a) Pumping Rate - 15 G.P.M.
   b) Depth of Pump Intake - 170 Feet below original ground.

The data on which these figures are based can be found in the appendix for each respective well. These figures are based on direct results obtained during development and testing. Any change (increase) in the pumping rate and/or depth of pump intake could result in disruption of the equilibrium established during development and testing. The consequences could be as extreme as requiring abandonment of the well.

It should be noted that the recommended pumping rate for Eastbound Well No. 3 is 10 G.P.M. rather than 12 G.P.M., the rate at which it was tested. The reason for this is the fact that during development and testing (see pumping data for 4/11/73) it became apparent that a pumping rate of even slightly greater than 13 G.P.M. was extremely critical. A safety factor of 3 G.P.M. rather than 1 G.P.M. was considered to be to the best advantage of the State.

Attention is also called to the results of physical testing on Westbound Well No. 1. A letter from Mr. D. Stone, Assistant Sanitary Engineer with the New York District Health Office in Oneonta, indicates the failure of the water to meet turbidity requirements. This does not constitute failure of the supply as a potable water source as explained in his follow-up letter dated April 4, 1973. Both letters can be found in the appendix for WB Well No. 1. It was the writer's opinion that the water

was not noticeably cloudier in this well (WB 1) than in WB 2C or EB 1 and 3, all of which passed the turbidity requirement. The writer agrees with Mr. Stone that the water can be made clearer by pumping. This can be done during installation of the permanent pump.

An unusual amount of difficulty was encountered during drilling of the test wells on the Westbound site. Intermittent boulders slowed production considerably in attempting to drill Test Well No. 2. The first attempt resulted in loss of the drillers "tools" when they became stuck in the hole at a depth of 162± feet. A second and third attempt (2A & 2B) also encountered difficulty. Well No. 2A required blasting to advance the casing, which was done successfully. However, the Contractor chose to abandon this hole in favor of using a larger diameter casing. Well No. 2B, using eight inch casing, was also abandoned when the hole drifted out of plumb. A fourth attempt, Well No. 2C, was successfully completed.

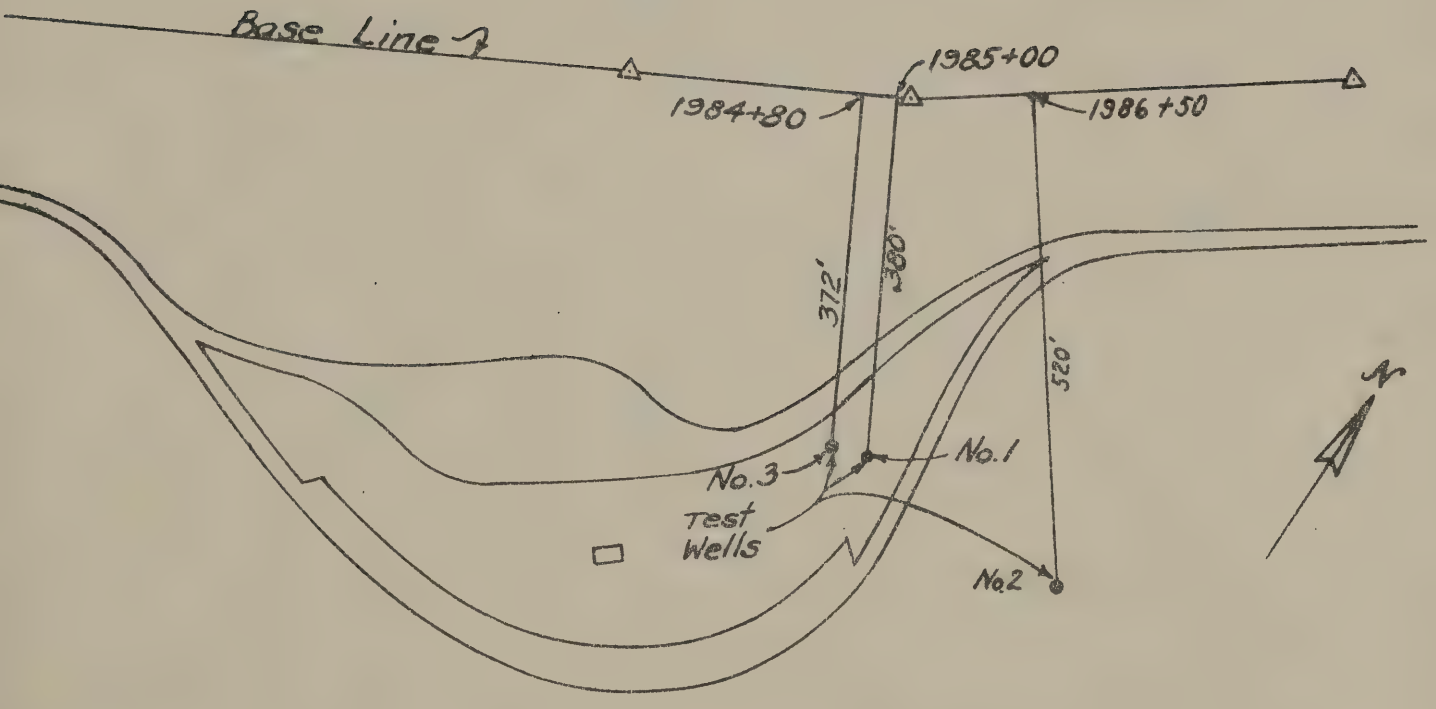
Drilling on the Eastbound site was somewhat easier. Test Wells 1 and 2 penetrated sand and gravel to depths of 95 and 78 feet respectively. At those depths both wells encountered bedrock and were completed as rock wells 175 and 299 feet in depth respectively. It was only after receiving test results from the State Health Department that it was determined that Test Well No. 2 was a saltwater well. Consideration was given to performing an electric and gamma ray survey of the well, however, the only water bearing zone was at a depth of 266 feet below original ground (elevation 850±). Since an abundance of water was encountered at shallower depths, 125 to 140 feet (elevation 978 to 993), in Test Well No. 1 it was decided to drill a third well near the first. The new well, designated Well No. 3, was drilled to a depth of 191 feet (elevation 927±) 20 to 25 feet from Well No. 1. Water was encountered at relatively shallow depths as anticipated, but not in the amounts hoped for. In lieu of drilling deeper and running the risk of penetrating a saltwater bearing zone it was decided to test Well No. 3. Preliminary samples were delivered to the Health Department lab in Albany where a quick test indicated the water was not salty. Development and testing proceeded with a yield of 10 G.P.M. being obtained.

A considerable amount of time was expended in developing and testing the wells at both sites. On the Eastbound site developing and testing was initially performed with a gasoline driven turbine pump. Several inadequacies were found with this method. Therefore, a submersible pump was used to complete work on the Eastbound site and for all work on the Westbound site.

At the time of installation of the permanent pump, disinfection procedures will clean considerable rust from the casing walls. Subsequent pumping to clean rusty water from the well should be continued to insure acceptable clear water, as previously stated. Upon completion of disinfection and pumping, all wells should be ready for use.

VB:MVM

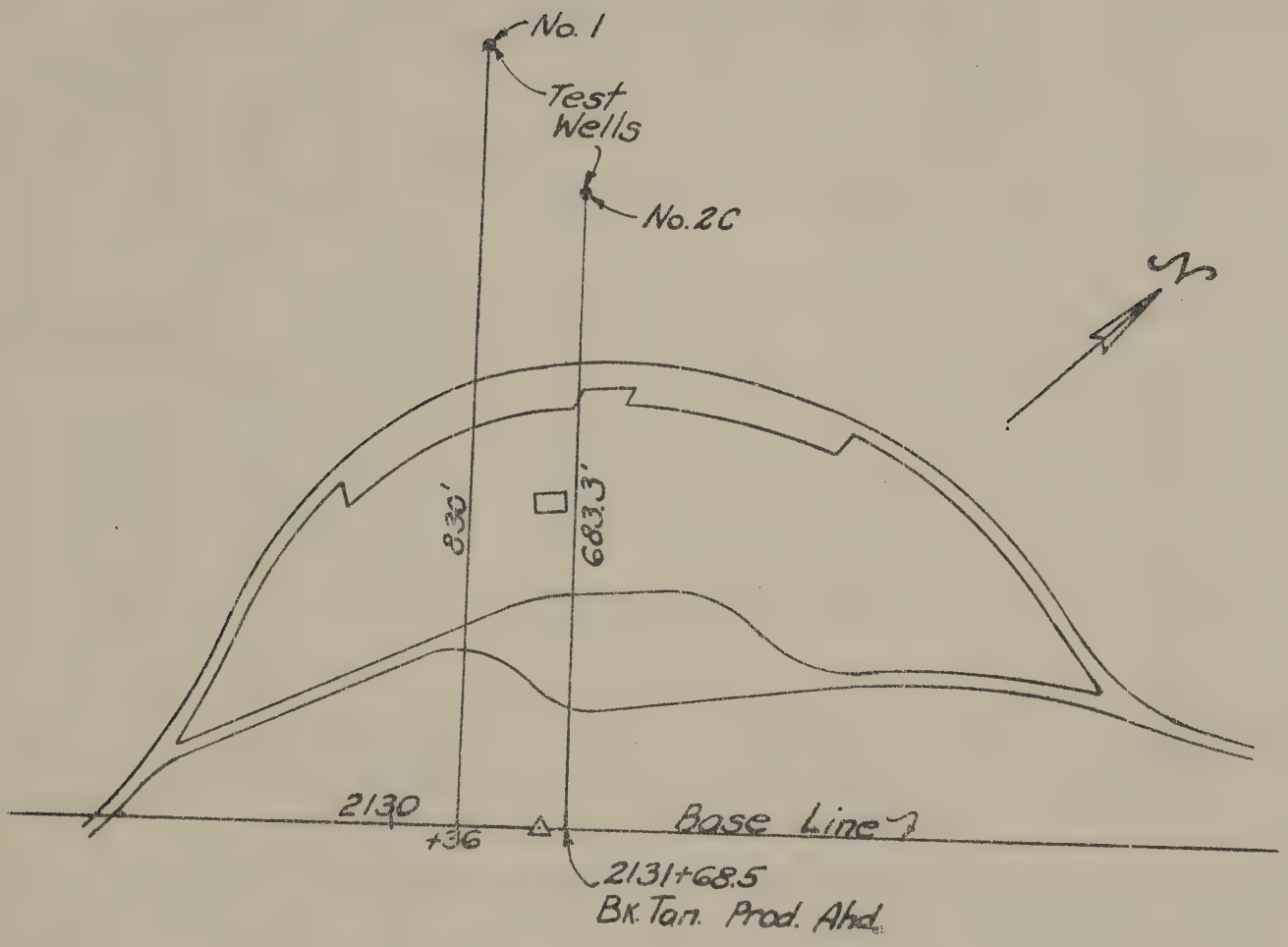
INTERSTATE ROUTE 508 (I-88)
SIDNEY-UNADILLA, SECTION .05



PLAN
Not to Scale

EASTBOUND REST AREA
WELL LOCATIONS - TEST WELLS 1, 2 & 3

INTERSTATE ROUTE 508 (I-88)
UNADILLA-OTEGO, SECTION .06



PLAN
Not to Scale

WESTBOUND REST AREA
WELL LOCATIONS - TEST WELLS 1 & 2C

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APPENDIX A

EASTBOUND REST AREA-TEST WELL NO. 1

I-88, SIDNEY-UNADILLA
EASTBOUND REST AREA-TEST WELL NO. 1

LOCATION

Baseline Station: 1985+00
Offset: 380 feet right
Original Ground Elevation (O.G.): 1118.2

DRILLING DATA

Contractor: Genesee Valley Nurseries Inc.
Driller: Lee Meyn
Method: Cable Tool
Date Started: 1/3/73
Date Completed: 1/12/73

WELL DATA

Source of Water: Bedrock
Overburden: Silt, Sand & Gravel
Depth to Rock: 98± feet
Water Locations: 125-130 feet and 140 feet
Static Level During Drilling: 100 feet
Depth of Well: 175 feet

TEST DATA

Small Pump (Initial Test)
Date Started & Completed: 1/30/73
Location of Pump Intake: 130 feet below O.G.
Static Level During Test: 97.5 feet
Yield: 15 gallons per minute (Maximum Capacity of Pump)
Drawdown: 2 feet
Specific Capacity: 7.5 G.P.M. per foot of drawdown

Large Pump (Final Test)
Date Started & Completed: 2/8/73
Location of Pump Intake: 129 feet below O.G.
Static Level During Test: 96.5 feet
Yield: 25 gallons per minute
Drawdown: 7 feet
Specific Capacity: 3.6 G.P.M. per foot of drawdown

PUMP DATA

Small Pump: Red Jacket-Submersible
1 HP, 208/230V, single phase, 60 HZ, 3450 R.P.M., 11.0 AMPS

Large Pump: Myers-Submersible
2 HP, 230 V, single phase, 60 HZ, 3450 R.P.M., 15.0 AMPS

I-88, SIDNEY-UNADILLA
EASTBOUND REST AREA-TEST WELL NO. 1

WELL LOG	WELL DETAILS
	Top of Casing Elevation - 1119.7 Original Ground Surface (O.G.)
Topsoil	Elevation - 1118.2
Alternating Layers of Silt Sand & Gravel 3 to 98 Feet	
	Static Water Level During Test Depth 96.5 Feet-Elevation 1021.7
Approx. Top of Bedrock-98 Feet	Bottom of Casing
Gray Siltstone & Sandstone 98 to 105 Feet	Depth 98± Feet-Elevation 1020.2 Drawdown, Pumping Rate-25 G.P.M.
	Depth 103.5 Feet-Elevation 1014.7
Red Siltstone 105 to 125 Feet	
Red & Gray Siltstone 125 to 130 Feet	Pump Intake During Final Test
	Depth 129 Feet-Elevation 989.2
Red Siltstone & Shale 130 to 147 Feet	
Gray Siltstone & Sandstone 147 to 163 Feet	
Red Siltstone 163 to 175 Feet	Bottom of Well
	Depth 175 Feet-Elevation 943.2

I-88, SIDNEY-UNADILLA
EASTBOUND REST AREA-TEST WELL NO. 1

INITIAL TEST

Static Level at Start of Test - 97.5 Feet Below Original Ground
Pump Intake at Start of Test - 130.0 Feet Below Original Ground

Date	Time	Rate (GPM)	Dynamic Water Level (Feet)	Drawdown (Feet)	Comments
1/30	9:00 AM	10	-	0	Water Rusty
	9:15 AM	10	98.5	1	Water Very Clear
	9:45 AM	10	98.5	1	Water Very Clear
	10:00 AM	15	99.0	1.5	Water Very Clear
	11:00 AM	15	99.0	1.5	Water Very Clear
	12:00 NOON	15	99.0	1.5	Water Very Clear
	12:15 PM	15	99.5	2.0	Water Very Clear
	1:15 PM	15	99.5	2.0	Water Very Clear
	2:15 PM	15	99.5	2.0	Water Very Clear
	3:15 PM	15	99.5	2.0	Water Very Clear
	4:15 PM	15	99.5	2.0	Water Very Clear
	5:00 PM	15	99.5	2.0	End Test

This initial test was performed using a 1 horsepower submersible pump manufactured by the Red Jacket Pump Company. The maximum pumping rate for this pump with the intake at a depth of 130 feet was 15 G.P.M.

I-88, SIDNEY-UNADILLA
EASTBOUND REST AREA-TEST WELL NO. 1

FINAL TEST

Static Level at Start of Test - 96.5 Feet Below Original Ground
Pump Intake at Start of Test - 129.0 Feet Below Original Ground

Date	Time	Rate (GPM)	Dynamic Water Level (Feet)	Drawdown (Feet)	Comments
2/8	10:40 AM	28-29 (Max.)	-	0	Water Rusty then Clear
	11:00 AM	28	99.5	3	Water slightly cloudy
	11:10 AM	-	-	-	Pump Trouble-Off
	11:35 AM	28	-	-	Water cloudy then clearing
	12:00 NOON	28?	101	4.5	Water cloudy again, then clearing
	12:01 PM	Pump shut off as we prepared to measure rate (28?)			
	12:10 PM	25	-	-	Rate reduced by Engineer, Water quite cloudy
	12:20 PM	-	-	-	Pump Trouble-Off
	12:30 PM	25	99	2.5	Water slightly cloudy
	12:45 PM	25	99.5	3.0	Water clearing
	1:00 PM	24-25	100.5	4.0	Generator running rough, Pumping rate fluctuating
	1:15 PM	25	101.5	5.0	Water clear
	1:30 PM	25	102.5	6.0	Water clear
	1:45 PM	25	103.5	7.0	Water clear
	2:00 PM	25	103.5	7.0	Water clear
	2:30 PM	25	103.5	7.0	Water clear
	3:30 PM	25	103.5	7.0	End Test

This final test was performed using a 2 horsepower submersible pump manufactured by the Myers Pump Company. The maximum pumping rate for this pump with the intake at a depth of 129 feet was 28± G.P.M.

January 25, 1973

Mr. Thomas Lynch
3547 Columbia Drive
Endwell, New York 13760

Re Bacteriological Sampling at
Proposed Interstate 188 Rest Area
Sidney Town

Dear Mr. Lynch:

The attached sample result indicates that the water received from test well No. 1 was of a safe, sanitary quality at the time this sample was collected.

The Division of Laboratories & Research requires a slightly longer time for analysis of chemical and physical quality. Therefore, results of these samples are not available as yet. When they are received in this office, we will interpret the quality as it applies to the New York State Drinking Water Standards and forward any comments to you.

Very truly yours,

Daniel W. Stone,
Assistant Sanitary Engineer

ATTACHMENT

cc Mr. Howe - Dept. of Transportation

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH CENTER

RESULTS OF EXAMINATION
(PAGE 1 OF 1)

REPORTING LAB: 01 CENTRAL AVE. LAB
LAB ACCESSION NO: 00471 YR/MO/DAY/HR SAMPLE REC'D: 73/01/16/08
PROGRAM: 151
STATION (SOURCE) NO:
DRAINAGE BASIN: 06 NY GAZETTEER NO: 1265 COUNTY: DELAWARE
COORDINATES: DEG ' "N. DEG ' "W
COMMON NAME INCL SUBW'SHED: SIDNEY NEAR RT 357 WELLS FOR DOT REST AREA I 88 CONT 9357.05
EXACT SAMPLING POINT: TEST WELL NO 1 RT 357 PROPOSED REST AREA I 88
TYPE OF SAMPLE: 12 WATER. DRILLED WELL
MO/DAY/HR OF SAMPLING: FROM 00/00 TO 01/15/16
REPORT SENT TO: CO (0) RO (0) LPHE (2) LHO (0) FED (0)

	PARAMETER	UNIT	RESULT	NOTATION
026800	STAND PLATE COUNT COL/ML.		1.	
027000	COLIFORM BACT MF COL/100ML		1.	LT

DATE COMPLETED: 1/19/73

NEW YORK STATE DEPT. OF HEALTH
ONEONTA DISTRICT OFFICE
P.O. BOX 459 UPPER WEST ST.
ONEONTA NEW YORK 13820

SUBMITTED BY: STONE

March 2, 1973

Mr. Thomas Lynch
3547 Columbia Drive
Endwell, New York 13760

Re: Chemical Sampling at Proposed
Interstate I88 Rest Area
Sidney Town

Dear Mr. Lynch:

This office received the results of the follow-up chemical sample collected from test well No. 1 at the proposed rest area for Interstate 88 in the vacinity of State Route 357. Contract number for this job is 9357.05.

The results of the water at the time of sampling indicate that it is in conformance with the New York State Drinking Water limits for those parameters listed on the attached laboratory reporting form.

It is noted, however, that based on the values of pH, alkalinity, hardness, and total dissolved solids, that this water should be categorized extremely agressive. This may result in abnormal deterioration of water fixtures.

If you have any questions regarding results, please do not hesitate to contact this office.

Very truly yours,

Daniel W. Stone
Asst. District Sanitary Engineer

Att.
cc: Mr. Howe - Dept. of Transportation

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH CENTER

RESULTS OF EXAMINATION
(PAGE 1 OF 2)

REPORTING LAB: 10 GRIFFIN LAB
LAB ACCESSION NO: 00309 YR/MO/DAY/HR SAMPLE REC'D: 73/02/02/10
PROGRAM: 151
STATION (SOURCE) NO:
DRAINAGE BASIN: 06 NY GAZETTEER NO: 1265 COUNTY: DELAWARE
COORDINATES: DEG ' "N. DEG ' "W
COMMON NAME INCL SUBW'SHED: SUSQUEHANNA R PROPOSED REST AREA I-88 WELL NO1 CONTRACT NO 9357.05
EXACT SAMPLING POINT: TEST WELL NO 1 REST AREA NEAR RT357
TYPE OF SAMPLE: 12 WATER. DRILLED WELL
MO/DAY/HR OF SAMPLING: FROM 00/00 TO 01/30/16
REPORT SENT TO: CO (1) RO (0) LPHE (2) LHO (0) FED (0)

	PARAMETER	UNIT	RESULT	NOTATION
000100	COLOR(APPARENT)		3.	
000200	TURBIDITY J.T.U.		0.5	LT
000300	ODOR. HOT		1.0044	
000501	AMMONIA NITROGEN AS N	MG/L	0.09	
000601	ALBUMINOID NITROGEN AS N	MG/L		LA
000709	NITRITE NITROGEN AS N	MCG/L	2.	
000801	NITRATE NITROGEN AS N	MG/L	0.3	
000901	OXYGEN CONSUMED	MG/L	0.8	
001001	CHLORIDES	MG/L	2.	
001101	HARDNESS. TOTAL AS CACO3	MG/L	35.	
001501	ALKALINITY. MTH OR AS CACO3	MG/L	19.	
001900	PH (LABORATORY)		6.8	
010001	IRON	MG/L	0.04	

DATE COMPLETED: 2/21/73

NEW YORK STATE DEPT. OF HEALTH
ONEONTA DISTRICT OFFICE
P.O. BOX 459 UPPER WEST ST.
ONEONTA NEW YORK 13820

ATTENTION OF: STONE

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH CENTER

RESULTS OF EXAMINATION
(PAGE 2 OF 2)

REPORTING LAB: 10 GRIFFIN LAB
LAB ACCESSION NO: 00309 YR/MO/DAY/HR SAMPLE REC'D: 73/02/02/10
PROGRAM: 151
STATION (SOURCE) NO:
DRAINAGE BASIN: 06 NY GAZETTEER NO: 1265 COUNTY: DELAWARE
COORDINATES: DEG ' "N. DEG ' "W
COMMON NAME INCL SUBW'SHED: SUSQUEHANNA R PROPOSED REST AREA I-88 WELL NO1 CONTRACT NO 9357.05
EXACT SAMPLING POINT: TEST WELL NO 1 REST AREA NEAR RT357
TYPE OF SAMPLE: 12 WATER. DRILLED WELL
MO/DAY/HR OF SAMPLING: FROM 00/00 TO 01/30/16
REPORT SENT TO: CO (1) RO (0) LPHE (2) LHO (0) FED (0)

PARAMETER		UNIT	RESULT	NOTATION
010201	MANGANESE	MG/L	0.02	LT
010701	SODIUM	MG/L	2.6	
100300	ODOR. COLD		1.0044	
002001	TOTAL DISSOLVED SOLIDS	MG/L	85.	
100100	COLOR (TRUE)			NR
001201	HARDNESS. CALCIUM AS CACO3	MG/L	28.	

DATE COMPLETED: 2/21/73

NEW YORK STATE DEPT. OF HEALTH
ONEONTA DISTRICT OFFICE
P.O. BOX 459 UPPER WEST ST.
ONEONTA NEW YORK 13820

ATTENTION OF: STONE

APPENDIX B

EASTBOUND REST AREA-TEST WELL NO. 3

I-88, SIDNEY-UNADILLA
EASTBOUND REST AREA-TEST WELL NO. 3

LOCATION

Baseline Station: 1984+80
Offset: 372 feet right
Original Ground Elevation: 1117.9

DRILLING DATA

Contractor: Genesee Valley Nurseries Inc.
Driller: Lee Meyn
Method: Cable Tool
Date Started: 3/27/73
Date Completed: 4/4/73

WELL DATA

Source of Water: Bedrock
Overburden: Silt, Sand & Gravel over Glacial Till
Depth to Rock: 104± feet
Water Locations: 120±, 148-157, and 180±
Static Level During Drilling: 96 to 105 feet
Depth of Well: 191 feet

TEST DATA

Date Started: 4/11/73
Date Completed: 4/17/73
Location of Pump Intake: 171 feet below O.G.
Static Level During Test: 94 & 95 feet
Yield: 12 gallons per minute
Drawdown: 15 feet
Specific Capacity: 0.8 G.P.M. per foot of drawdown

PUMP DATA

Make & Type: Myers Submersible
2 HP, 230V, Single Phase, 60 HZ, 3450 R.P.M., 15.0 AMPS

EASTBOUND REST AREA-TEST WELL NO. 3

WELL LOG	WELL DETAILS
	Top of Casing Elevation - 1120.0 Original Ground Surface (O.G.) Elevation - 1117.9
Topsoil	
Alternating Layers of Silt Sand & Gravel 3 to 90 Feet	
Glacial Till 90 to 104 Feet Top of Bedrock-104 Feet	Static Water Level During Test Depth 94 & 95 Ft. - Elevation 1023.9
	Bottom of Casing Depth 105 Feet - Elevation 1012.9
Red Shale 104 to 116 Feet	
Gray & Red Shale 116 to 120 Feet	
Red Shale, Minor Gray Shale 120 to 148 Feet	
Gray Shale, Minor Red Shale 145 to 158 Feet	
Gray Sandstone 158 to 161+ Ft.	
Gray & Red Shale 161 to 164 Ft.	
Red & Gray Shale 164 to 173 Feet	Pump Intake During Final Test Depth 171 Feet - Elevation 946.9
Red Shale 173 to 175 Feet	
Red & Gray Shale 175 to 184 Feet	
Red Shale 184 to 191 Feet	Bottom of Well Depth 191 Feet - Elevation 926.9

I-88, SIDNEY-UNADILLA
EASTBOUND REST AREA-TEST WELL NO. 3

Static Level at Start of Test - 94&95 Feet Below Original Ground
Pump Intake at Start of Test - 171.0 Feet Below Original Ground

Date	Time	Rate (GPM)	Dynamic Water Level (Feet)	Drawdown (Feet)	Comments
4/11	9:15 AM	Well had been pumped 23+ hours at this time			
	9:15 AM	12.5	117.5	23.5	Rate reduced by Engr.
	11:00 AM	12.5	117.5	23.5	Water Slightly Cloudy
	11:15 AM	13	119.5	25.5	Open valve to 13 GPM Water Slightly Cloudy
	11:30 AM	13-	119.5	25.5	Water Slightly Cloudy
	11:45 PM	13	121.0	27.0	Water Slightly Cloudy
	12:00 NOON	13	121.0	27.0	Water Slightly Cloudy
	12:15 PM	13-	120.0	26.0	Water Slightly Cloudy
	12:30 PM	13	122.5	28.5	Water Slightly Cloudy
	12:45 PM	13	125.0	31.0	Water Clear
	1:00 PM	13	126.5	32.5	Water Clear
	1:30 PM	13	130.0	36.0	Water Clear
	1:55 PM	13	130.5	36.5	Water Clear
	2:30 PM	13+	144.0	50.0	Water Clear
	3:00 PM	13+	161.0	67.0	Stop Test until 4/17
4/17	8:00 AM	12	-	0	Water Rusty
	8:15 AM	12	105.0	10	Water Slightly Cloudy
	8:30 AM	12	107.5	12.5	Water Slightly Cloudy
	8:45 AM	12	108.0	13	Water Clear
	9:00 AM	12	109.0	14	Water Very Clear
	9:30 AM	12+	110.0	15	Water Very Clear
	9:45 AM	12	110+	15+	Water Very Clear
	10:00 AM	12	110.5	15.5	Water Very Clear
	10:15 AM	12	110.5	15.5	Water Very Clear
	10:30 AM	12	110.5	15.5	Water Very Clear
	11:00 AM	12	111.0	16	Water Very Clear
	11:30 AM	12	110.5	15.5	Water Very Clear
	12:00 NOON	12	110.0	15	Water Very Clear
	12:30 PM	12	110.0	15	Water Very Clear
	1:00 PM	12	109.5	14.5	Water Very Clear
	1:30 PM	12	109.5	14.5	Water Very Clear
	2:00 PM	12	109.5	14.5	Water Very Clear
	2:30 PM	12	109.5	14.5	Water Very Clear
	3:00 PM	12	109.5	14.5	Water Very Clear
	3:30 PM	12	110.0	15.0	Water Very Clear
	4:00 PM	12	110.0	15.0	End Test

HOLLIS S. INGRAHAM, M.D.
COMMISSIONER

STATE OF NEW YORK
DEPARTMENT OF HEALTH

DISTRICT OFFICE
P.O. BOX 459
UPPER WEST STREET
ONEONTA, N. Y. 13820

April 26, 1973

Mr. Thomas Lynch
3547 Columbia Drive
Endwell, New York 13760

Re Bacteriological Sampling at
Proposed Interstate I88 Rest Area
Sidney Town - Delaware County

Dear Mr. Lynch:

This office received the results of the bacteriological sample collected from test well No. 3 at the proposed rest area for Interstate I88.

The results of this sample indicate the water at the time of sampling was of a safe, sanitary quality.

If you have any questions regarding these results, please do not hesitate to contact this office.

Very truly yours,

Daniel W. Stone,
Assistant Sanitary Engineer

ATTACHMENT

cc Mr. Howe - Dept. of Transportation

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH CENTER

RESULTS OF EXAMINATION
(PAGE 1 OF 1)

REPORTING LAB: 01 CENTRAL AVE. LAB
LAB ACCESSION NO: 04378 YR/MO/DAY/HR SAMPLE REC'D: 73/04/18/08
PROGRAM: 151
STATION (SOURCE) NO:
DRAINAGE BASIN: 06 NY GAZETTEER NO: 1265 COUNTY: DELAWARE
COORDINATES: DEG ' "N. DEG ' "W
COMMON NAME INCL SUBW'SHED: REST AREA FOR I 88 FOR DOT CONT 9357 05
Tw. J Sidney

EXACT SAMPLING POINT: TEST WELL NO 3
TYPE OF SAMPLE: 12 WATER. DRILLED WELL
MO/DAY/HR OF SAMPLING: FROM 00/00 TO 04/17/16
REPORT SENT TO: CO (1) RO (0) LPHE (2) LHO (0) FED (0)

	PARAMETER	UNIT	RESULT	NOTATION
026800	STAND PLATE COUNT COL/ML.		53.	
027000	COLIFORM BACT MF COL/100ML		1.	LT

DATE COMPLETED: 4/23/73

NEW YORK STATE DEPT. OF HEALTH
ONEONTA DISTRICT OFFICE
P.O. BOX 459 UPPER WEST ST.
ONEONTA NEW YORK 13820

SUBMITTED BY: BOWERS

HOLLIS S. INGRAHAM, M.D.
COMMISSIONER

STATE OF NEW YORK
DEPARTMENT OF HEALTH

DISTRICT OFFICE
P.O. BOX 459
UPPER WEST STREET
ONEONTA, N. Y. 13820

May 14, 1973

Mr. Thomas Lynch
3547 Columbia Drive
Endwell, New York 13760

Re Chemical Sampling at Proposed
Interstate I88 Rest Area
Sidney Town - Delaware County

Dear Mr. Lynch:

This office received the results of the first chemical sample collected from test well No. 3 at the proposed rest area for Interstate I88 in the vicinity of State Route 357. Contract number for this job is 9357.05.

Results of the water at the time of sampling indicate that it is in conformity with the New York State Drinking Water Standard Limits for those parameters analyzed. The water does, however, demonstrate aggressive properties based on the values of hardness, alkalinity, total dissolved solids, and pH. A copy of the results is attached for your use.

If you have any questions regarding this transmittal or results, please do not hesitate to contact this office.

Very truly yours,

Daniel W. Stone,
Assistant Sanitary Engineer

ATTACHMENT

cc Mr. Howe - Dept. of Transportation

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH CENTER

RESULTS OF EXAMINATION
(PAGE 1 OF 2)

REPORTING LAB: 10 GRIFFIN LAB
LAB ACCESSION NO: 01565 YR/MO/DAY/HR SAMPLE REC'D: 73/04/18/10
PROGRAM: 151
STATION (SOURCE) NO:
DRAINAGE BASIN: 06 NY GAZETTEER NO: 1265 COUNTY: DELAWARE
COORDINATES: DEG ' "N. DEG ' "W
COMMON NAME INCL SUBW'SHED: REST AREA FOR DOT I-88CONT 9357.05NEAR NYS RT 357
EXACT SAMPLING POINT: TEST WELL #3 NEAR NYS RTE 357
TYPE OF SAMPLE: 12 WATER. DRILLED WELL
MO/DAY/HR OF SAMPLING: FROM 00/00 TO 04/17/16
REPORT SENT TO: CO (1) RO (0) LPHE (2) LHO (0) FED (0)

	PARAMETER	UNIT	RESULT	NOTATION
000100	COLOR(APPARENT)		0.	
000200	TURBIDITY J.T.U.		0.5	LT
000300	ODOR. HOT		1.0044	
000501	AMMONIA NITROGEN AS N	MG/L		LA
000601	ALBUMINOID NITROGEN AS N	MG/L	0.11	
000709	NITRITE NITROGEN AS N	MCG/L	4.	
000801	NITRATE NITROGEN AS N	MG/L	.6	
000901	OXYGEN CONSUMED	MG/L	0.5	
001001	CHLORIDES	MG/L	9.	
001101	HARDNESS. TOTAL AS CACO3	MG/L	28.	
001501	ALKALINITY. MTH OR AS CACO3	MG/L	22.	
001900	PH (LABORATORY)		6.4	
010001	IRON	MG/L	0.05	

DATE COMPLETED: 5/10/73

NEW YORK STATE DEPT. OF HEALTH
ONEONTA DISTRICT OFFICE
P.O. BOX 459 UPPER WEST ST.
ONEONTA NEW YORK 13820

ATTENTION OF: BALDWIN

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH CENTER

RESULTS OF EXAMINATION
(PAGE 2 OF 2)

REPORTING LAB: 10 GRIFFIN LAB
LAB ACCESSION NO: 01565 YR/MO/DAY/HR SAMPLE REC'D: 73/04/18/10
PROGRAM: 151
STATION (SOURCE) NO:
DRAINAGE BASIN: 06 NY GAZETTEER NO: 1265 COUNTY: DELAWARE
COORDINATES: DEG ' "N. DEG ' "W
COMMON NAME INCL SUBW'SHED: REST AREA FOR DOT I-88CONT 9357.05NEAR NYS RT 357
EXACT SAMPLING POINT: TEST WELL #3 NEAR NYS RTE 357
TYPE OF SAMPLE: 12 WATER. DRILLED WELL
MO/DAY/HR OF SAMPLING: FROM 00/00 TO 04/17/16
REPORT SENT TO: CO (1) RO (0) LPHE (2) LHO (0) FED (0)

	PARAMETER	UNIT	RESULT	NOTATION
010201	MANGANESE	MG/L	0.02	LT
010701	SODIUM	MG/L	2.5	
100300	ODOR. COLD		1.0044	

DATE COMPLETED: 5/10/73

NEW YORK STATE DEPT. OF HEALTH
ONEONTA DISTRICT OFFICE
P.O. BOX 459 UPPER WEST ST.
ONEONTA NEW YORK 13820

ATTENTION OF: BALDWIN

APPENDIX C

WESTBOUND REST AREA-TEST WELL NO. 1

I-88, UNADILLA-OTEGO
WESTBOUND REST AREA-TEST WELL NO. 1

LOCATION

Baseline Station: 2130+36
Offset: 830 feet right
Original Ground Elevation (O.G.): 1150.3

DRILLING DATA

Contractor: Genesee Valley Nurseries Inc.
Driller: Lee Meyn
Method: Cable Tool
Date Started: 10/4/72
Date Completed: 10/10/72

WELL DATA

Source of Water: Granular Material
Overburden: Silt, Sand & Gravel, with thin clay layers
Depth to Rock: 196 feet
Water Locations: 155 feet (water table) and 194 to 196 feet
Static Level During Drilling: 129 feet
Depth of Well: 205.5 feet

TEST DATA

Date Started: 2/19/73
Date Completed: 2/22/73
Location of Pump Intake: 149 feet below O.G.
Static Level During Test: 119 feet
Yield: 20 gallons per minute
Drawdown: 18.5 feet
Specific Capacity: 1.1 G.P.M. per foot of drawdown

PUMP DATA

Make & Type: Myers Submersible
2 HP, 230V, Single Phase, 60 HZ, 3450 R.P.M., 15.0 AMPS

I-88, UNADILLA-OTEGO
WESTBOUND REST AREA-TEST WELL NO. 1

WELL LOG	WELL DETAILS
	Top of Casing Elevation - 1151.6 Original Ground Surface (O.G.) Elevation - 1150.3
Topsoil Alternating Layers of Silt Sand & Gravel 3 to 86 Feet	
Silt & Fine Sand 86 to 138 Feet Thin Red Clay Layer-120 Feet	Static Water Level During Test Depth 119 Feet-Elevation 1031.3
	Drawdown, Pumping Rate-20 G.P.M. Depth 137.5Feet-Elevation 1012.8
Silt, Sand & Gravel 138 to 148 Feet	Pump Intake During Final Test
Sand-148 to 152 Feet	Depth 149 Feet-Elevation 1001.3
Silt & Fine Sand Minor Coarse Sand & Red Clay 152 to 172 Feet Thin Red Silt Layer-173 Feet	
Alternating Layers of Silt, Sand & Gravel 174 to 192 Feet	
	Bottom of Casing
Rock Slab-192 to 194 Feet	Depth 192 Feet-Elevation 958.3
Silt & Sand -194 to 196 Feet Top of Bedrock-196 Ft.(954.3)	
Gray Sandstone-196 to 205.5 Feet	Bottom of Well Depth 205.5 Feet-Elevation 944.8

I-88, UNADILLA-OTEGO
WESTBOUND REST AREA-TEST WELL NO. 1

Static Level at Start of Test - 119 Feet Below Original Ground
Pump Intake at Start of Test - 149 Feet Below Original Ground

Date	Time	Rate (GPM)	Dynamic Water Level (Feet)	Drawdown (Feet)	Comments
2/19	7:00 AM	25	-	0	Water Cloudy
	9:00 AM	25	-	-	Water Dirty
	7:00 PM	25	143.0	24	Water Dirty
2/20	1:00 AM	25	143.0	24	Water Dirty
	10:00 AM	24+	143.0	24	Water Dirty
	1:00 PM	25	142.5	23.5	Water Dirty
	4:00 PM	25	142.5	23.5	Slightly Improved
	10:00 PM	25	142.5	23.5	Slightly Improved
2/21	1:00 AM	25	142.5	23.5	Water Dirty
	4:00 AM	25	142.5	23.5	Water Very Cloudy
	9:00 AM	25	142.5	23.5	Water Cloudy
	3:00 PM	25	142.5	23.5	Water Cloudy
	3:45 PM	Shut pump off for 1 hour prior to reducing rate			
	4:45 PM	20	-	-	Rate reduced by Engineer Water Very Cloudy
	5:45 PM	20	136.0	17.0	Water Slightly Cloudy
	6:30 PM	20	136.5	17.5	Water Slightly Cloudy
	7:15 PM	20	137.5	18.5	Water Slightly Cloudy
	12:00 (Mid-night)	20	137.5	18.5	Water Slightly Cloudy
2/22	4:00 AM	20	137.5	18.5	Water Clear
	12:00 Noon	20	137.5	18.5	Water Clear
	12:01 PM	Shut pump off for one hour to see if water would cloud up			
	1:00 PM	20	-	-	Water Clearer
	2:00 PM	20	136.5	17.5	Water Clearer
	2:01 PM	Shut pump off for one hour to see if water would cloud up			
	3:00 PM	20	-	-	Water Clear
	4:00 PM	20	-	-	End Test

The test results indicate a potential yield of 20 G.P.M. at an 18.5 foot drawdown with the pump intake at a depth of 149 feet. However, it should be noted that the static water level was ten feet lower during drilling than during testing. Therefore, the recommendation for a pumping rate of 15 G.P.M. allows for this fact and is based on pump data obtained during development. It will provide a safety factor should the ground water level fluctuate during the year.

HOLLIS S. INGRAHAM, M.D.
COMMISSIONER

STATE OF NEW YORK
DEPARTMENT OF HEALTH

DISTRICT OFFICE
P.O. BOX 459
UPPER WEST STREET
ONEONTA, N. Y. 13820

March 8, 1973

Mr. Thomas Lynch
3547 Columbia Drive
Endwell, New York 13760

Re Bacteriological Sampling at Proposed
Interstate I88 Rest Area
Sidney Town - Delaware County

Dear Mr. Lynch:

This office received the results of the first bacteriological sample collected from test well No. 1 at the proposed rest area for Interstate I88 in the vicinity of County Route 44. Contract number for this job is 9357.06.

The results of this sample indicate the water at the time of sampling was of a safe, sanitary quality. We anticipate results of chemical analysis of this water will follow shortly.

If you have any questions regarding these results, please do not hesitate to contact this office.

Very truly yours,

Daniel W. Stone,
Assistant Sanitary Engineer

cc Mr. Howe - Dept. of Transportation

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH CENTER

RESULTS OF EXAMINATION
(PAGE 1 OF 1)

REPORTING LAB: 01 CENTRAL AVE. LAB
LAB ACCESSION NO: 02228 YR/MO/DAY/HR SAMPLE REC'D: 73/02/27/08
PROGRAM: 151
STATION (SOURCE) NO:
DRAINAGE BASIN: 06 NY GAZETTEER NO: 1265 COUNTY: DELAWARE
COORDINATES: DEG ' "N. DEG ' "W
COMMON NAME INCL SUBW'SHED: SIDNEY NEAR CO ROAD #44 REST AREA FOR DOT
I88 CONT 9357.06WELLS BRIDGE
EXACT SAMPLING POINT: TEST WELL #1 CO RD #44 PROPOSED REST AREA I88
TYPE OF SAMPLE: 12 WATER. DRILLED WELL
MO/DAY/HR OF SAMPLING: FROM 00/00 TO 02/26/15
REPORT SENT TO: CO (0) RO (0) LPHE (2) LHO (0) FED (0)

	PARAMETER	UNIT	RESULT	NOTATION
026800	STAND PLATE COUNT COL/ML.		66.	
027000	COLIFORM BACT MF COL/100ML		1.	LT

DATE COMPLETED: 3/01/73

NEW YORK STATE DEPT. OF HEALTH
ONEONTA DISTRICT OFFICE
P.O. BOX 459 UPPER WEST ST.
ONEONTA NEW YORK 13820

SUBMITTED BY: LYNCH

HOLLIS S. INGRAHAM, M.D.
COMMISSIONER

STATE OF NEW YORK
DEPARTMENT OF HEALTH

DISTRICT OFFICE
P.O. BOX 459
UPPER WEST STREET
ONEONTA, N. Y. 13820

March 27, 1973

Mr. Thomas Lynch
3547 Columbia Drive
Endwell, New York 13760

Re Chemical Sampling at Proposed
Interstate I88 Rest Area
Sidney Town - Delaware County

Dear Mr. Lynch:

This office received the results of the chemical sample collected from test well No. 1 at the proposed rest area for Interstate I88 in the vicinity of County Road 44. The contract number for this job is 9357.06.

The results indicate that the water sampled does not meet the New York State Drinking Water Standards Limit for turbidity. The Drinking Water Standard for turbidity is 5 Jackson Turbidity Units. All other parameters analyzed showed that the water quality at the time this sample was collected conformed with the limits prescribed by the Drinking Water Standards. There is a possibility that the turbidity value experienced at the time of this sampling may be reduced with further pumpage of this well.

If you wish a follow-up sample to be collected, please contact this office to make the necessary arrangements. If you have any questions concerning these results or this transmittal, please do not hesitate to call me.

Very truly yours,

Daniel W. Stone,
Assistant Sanitary Engineer

cc Mr. Howe - Dept. of Transportation

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH CENTER

RESULTS OF EXAMINATION
(PAGE 1 OF 2)

REPORTING LAB: 10 GRIFFIN LAB
LAB ACCESSION NO: 00708 YR/MO/DAY/HR SAMPLE REC'D: 73/03/01/10
PROGRAM: 151
STATION (SOURCE) NO:
DRAINAGE BASIN: 06 NY GAZETTEER NO: 1265 COUNTY: DELAWARE
COORDINATES: DEG ' "N. DEG ' "W
COMMON NAME INCL SUBW'SHED: SIDNEY NEAR CO ROAD #44 REST AREA FOR DOT I 88 CONT9357.06 WELLS BRIDGE
EXACT SAMPLING POINT: TEST WELL#1 CO RD #44 PROPOSED REST AREA I88
TYPE OF SAMPLE: 12 WATER. DRILLED WELL
MO/DAY/HR OF SAMPLING: FROM 00/00 TO 02/26/15
REPORT SENT TO: CO (1) RO (0) LPHE (2) LHO (0) FED (0)

	PARAMETER	UNIT	RESULT	NOTATION
000100	COLOR(APPARENT)		5.	
000200	TURBIDITY J.T.U.		6.	
000300	ODOR. HOT		1.0044	
000501	AMMONIA NITROGEN AS N	MG/L	0.02	
000601	ALBUMINOID NITROGEN AS N	MG/L	0.02	
000709	NITRITE NITROGEN AS N	MCG/L	4.	
000801	NITRATE NITROGEN AS N	MG/L	0.2	
000901	OXYGEN CONSUMED	MG/L	0.5	
001001	CHLORIDES	MG/L	1.	LT
001101	HARDNESS. TOTAL AS CACO3	MG/L	97.	
001501	ALKALINITY. MTH OR AS CACO3	MG/L	90.	
001900	PH (LABORATORY)		7.7	
010001	IRON	MG/L	0.07	

DATE COMPLETED: 3/21/73

NEW YORK STATE DEPT. OF HEALTH
ONEONTA DISTRICT OFFICE
P.O. BOX 459 UPPER WEST ST.
ONEONTA NEW YORK 13820

ATTENTION OF: BALDWIN

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH CENTER

RESULTS OF EXAMINATION
(PAGE 2 OF 2)

REPORTING LAB: 10 GRIFFIN LAB
LAB ACCESSION NO: 00708 YR/MO/DAY/HR SAMPLE REC'D: 73/03/01/10
PROGRAM: 151
STATION (SOURCE) NO:
DRAINAGE BASIN: 06 NY GAZETTEER NO: 1265 COUNTY: DELAWARE
COORDINATES: DEG ' "N. DEG ' "W
COMMON NAME INCL SUBW'SHED: SIDNEY NEAR CO ROAD #44 REST AREA FOR DOT I
88 CONT9357.06 WELLS BRIDGE
EXACT SAMPLING POINT: TEST WELL#1 CO RD #44 PROPOSED REST AREA I88
TYPE OF SAMPLE: 12 WATER. DRILLED WELL
MO/DAY/HR OF SAMPLING: FROM 00/00 TO 02/26/15
REPORT SENT TO: CO (1) RO (0) LPHE (2) LHO (0) FED (0)

	PARAMETER	UNIT	RESULT	NOTATION
010201	MANGANESE	MG/L	0.02	
010701	SODIUM	MG/L	4.5	
100300	ODOR. COLD		1.0044	
000401	FLUORIDES	MG/L	.1	
002001	TOTAL DISSOLVED SOLIDS	MG/L	141.	

DATE COMPLETED: 3/21/73

NEW YORK STATE DEPT. OF HEALTH
ONEONTA DISTRICT OFFICE
P.O. BOX 459 UPPER WEST ST.
ONEONTA NEW YORK 13820

ATTENTION OF: BALDWIN

STATE OF NEW YORK
DEPARTMENT OF HEALTH

HOLLIS S. INGRAHAM, M.D.
COMMISSIONER

DISTRICT OFFICE
P.O. BOX 459
UPPER WEST STREET
ONEONTA, N. Y. 13820

April 4, 1973

Mr. Thomas Lynch
3547 Columbia Drive
Endwell, New York 13760

Re Chemical Sampling at Proposed
I88 Rest Area
Sidney Town - Delaware County

Dear Mr. Lynch:

This office was recently informed that some misunderstanding has occurred concerning my letter of March 27, 1973, regarding the above referenced subject. The sample discussed at that time was collected at test well No. 1 at the proposed rest area for Interstate I88 in the vicinity of County Route 44. The contract number for this well is 9357.06.

In that letter, the writer indicated that the turbidity value for this well was 6 Jackson Turbidity Units. This is in excess of the State standard listed as 5 Jackson Turbidity Units. I will, however, at this time quote Part 72.4 of the State Sanitary Code which is entitled "Physical Characteristics".

> To conform with these standards not more than two of the following values shall be exceeded in any single sample. The arithmetic average of all samples examined in any month shall not exceed any of the following:
>
> turbidity, 5 units
> color, 15 units
> threshold odor, 3

This sample, although it exceeds the limit of 5 Jackson Turbidity Units, is in compliance with the Drinking Water Standards in that the values for color and odor were 5 and 1, respectively.

I hope this letter clears up any questions created by my letter of March 27. If you wish a follow-up sample to be collected, please contact this office to make the necessary arrangements. Also, if you have any additional questions concerning these wells, please do not hesitate to call.

Very truly yours,

Daniel W. Stone,
Assistant Sanitary Engineer

cc Mr. Howe

APPENDIX D

WESTBOUND REST AREA-TEST WELL NO. 2C

I-88, UNADILLA-OTEGO
WESTBOUND REST AREA-TEST WELL NO. 2C

LOCATION

Baseline Station: 2131+69 BTPA
Offset: 683 feet left
Original Ground Elevation (O.G.): 1154.3

DRILLING DATA

Contractor: Genesee Valley Nurseries Inc.
Driller: Lee Meyn
Method: Cable Tool
Date Started: 11/21/72
Date Completed: 12/9/72

WELL DATA

Source of Water: Granular Material
Overburden: Silt, Sand & Gravel over Glacial Till
Depth to Rock: Not Applicable
Water Locations: 159 feet (water table) and 192 to 203 feet
Static Level During Drilling: 140 feet
Depth of Well: 203 feet

TEST DATA

Date Started: 3/15/73
Date Completed: 3/21/73
Location of Pump Intake: 170 feet below O.G.
Static Level During Test: 124 feet
Yield: 15 gallons per minute
Drawdown: 21 feet
Specific Capacity: 0.7 G.P.M. per foot of drawdown

PUMP DATA

Make & Type: Myers Submersible
2 HP, 230V, Single Phase, 60 HZ, 3450 R.P.M., 15.0 AMPS

I-88, UNADILLA-OTEGO
WESTBOUND REST AREA-TEST WELL NO. 2C

WELL LOG	WELL DETAILS
	Top of Casing Elevation 1155.8 Original Ground Surface (O.G.)
Topsoil	Elevation 1154.3
Alternating Layers of Silt Sand & Gravel 3 to 172.5 Feet	
	Static Water Level During Test Depth 124 Feet - Elevation 1030.3
	Drawdown, Pumping Rate - 15 G.P.M. Depth 145± Feet - Elevation 1009.3
	Pump Intake During Final Test Depth 170 Feet - Elevation 984.3
Glacial Till with Water Bearing Granular Layers 172.5 to 203 Feet	Bottom of Casing Depth 192 Feet - Elevation 962.3
	Bottom of Well Depth 203 Feet - Elevation 951.3

I-88, UNADILLA-OTEGO
WESTBOUND REST AREA-TEST WELL NO. 2C

INITIAL TEST

Static Level at Start of Test - 124.0 Feet Below Original Ground
Pump Intake at Start of Test - 170.0 Feet Below Original Ground

Date	Time	Rate (GPM)	Dynamic Water Level (Feet)	Drawdown (Feet)	Comments
3/15	7:00 AM	20	-	0	Water Very Cloudy
	8:15 AM	20	Water down to level of pump intake		
	8:40 AM	16	161.0	37.0	Rate reduced by Engr. Water Clearing
	8:55 AM	16	161.5	37.5	Water Very Clear
	9:15 AM	16.5	162.5	38.5	Water Clear
	12:00 NOON	16.5	-	-	Water Cloudy
	1:00 PM	16.5	154.5	30.5	Water Level Rising, Water Clearing
	1:30 PM	18	157.5	33.5	Water Slightly Cloudy
	4:30 PM	18	157.0	33.0	Water Very Clear
	NO FURTHER TESTING UNTIL MARCH 21st				
3/21	8:00 AM	15	-	0	Water Rusty
	8:15 AM	15	140.5	16.5	Water Slightly Cloudy
	8:30 AM	15	141.0	17.0	Water Slightly Cloudy
	8:45 AM	15	142.0	18.0	Water Slightly Cloudy
	9:00 AM	15	142.0	18.0	Water Clear
	9:15 AM	15	142.5	18.5	Water Very Clear
	9:30 AM	15	142.5	18.5	Water Very Clear
	10:00 AM	15	143.5	19.5	Water Very Clear
	10:30 AM	15	144.0	20	Water Very Clear
	11:00 AM	15	144.5	20.5	Water Very Clear
	11:35 AM	15	145.0	21.0	Water Very Clear
	NOON	15	144.5	20.5	Water Very Clear
	1:00 PM	15	144.5	20.5	Water Very Clear
	1:45 PM	18	-	-	Rate changed by Engr.
	2:00 PM	20	148.5	24.5	Clarity of Water
	3:00 PM	18	152.5	28.5	Reduced
	3:30 PM	18	152.5	28.5	Slightly
	4:30 PM	15	145.5	21.5	End Test

HOLLIS S. INGRAHAM, M.D.
COMMISSIONER

STATE OF NEW YORK
DEPARTMENT OF HEALTH

DISTRICT OFFICE
P.O. BOX 459
UPPER WEST STREET
ONEONTA, N. Y. 13820

March 30, 1973

Mr. Thomas Lynch
3547 Columbia Drive
Endwell, New York 13760

Re Bacteriological Sampling at Proposed
Interstate I88 Rest Area
Sidney Town - Delaware County

Dear Mr. Lynch:

This office received the results of the bacteriological sample collected from test well No. 2C at the proposed rest area for Interstate I88 in the vicinity of County Road 44.

The results of this sample indicate the water at the time of sampling was of a safe, sanitary quality.

If you have any questions regarding these results, please do not hesitate to contact this office.

Very truly yours,

Daniel W. Stone,
Assistant Sanitary Engineer

ATTACHMENT

cc Mr. Howe - Dept. of Transportation

NEW YORK STAT HEALTH
DIVISION OF LA[illegible]IES AND RESEARCH
ENVIRONMENTAL HEALTH CENTER

RESULTS OF EXAMINATION
(PAGE 1 OF 1)

REPORTING LAB: 01 CENTRAL AVE. LAB
LAB ACCESSION NO: 03286 YR/MO/DAY/HR SAMPLE REC'D: 73/03/22/08
PROGRAM: 151
STATION (SOURCE) NO:
DRAINAGE BASIN: 06 NY GAZETTEER NO: 1265 COUNTY: DELAWARE
COORDINATES: DEG ' "N. DEG ' "W
COMMON NAME INCL SUBW'SHED: T SIDNEY NEAR CO RD 44 REST AREA FOR DOT

EXACT SAMPLING POINT: TEST WELL 2C
TYPE OF SAMPLE: 12 WATER. DRILLED WELL
MO/DAY/HR OF SAMPLING: FROM 00/00 TO 03/21/16
REPORT SENT TO: CO (1) RO (1) LPHE (2) LHO (0) FED (0)

	PARAMETER	UNIT	RESULT	NOTATION
026800	STAND PLATE COUNT COL/ML.		1.	LT
027000	COLIFORM BACT MF COL/100ML		1.	LT

DATE COMPLETED: 3/27/73

NEW YORK STATE DEPT. OF HEALTH
ONEONTA DISTRICT OFFICE
P.O. BOX 459 UPPER WEST ST.
ONEONTA NEW YORK 13820

SUBMITTED BY: STONE

HOLLIS S. INGRAHAM, M.D.
COMMISSIONER

STATE OF NEW YORK
DEPARTMENT OF HEALTH

DISTRICT OFFICE
P.O. BOX 459
UPPER WEST STREET
ONEONTA, N. Y. 13820

April 26, 1973

Mr. Thomas Lynch
3547 Columbia Drive
Endwell, New York 13760

Re Chemical Sampling at Proposed
Interstate I88 Rest Area
Sidney Town - Delaware County

Dear Mr. Lynch:

This office received the results of the follow-up chemical sample collected from test well No. 2c at the proposed rest area for Interstate I88 in the vicinity of County Road 44. Contract number for this job is 9357.06.

The results of the water at the time of sampling indicate that it is in comformance with the New York State Drinking Water Limits for those parameters listed on the attached laboratory report form.

It is noted, however, that based on the values of pH, alkalinity, hardness, and total dissolved solids that this water should be categorized aggressive. This may result in abnormal deterioration of water fixtures.

If you have any questions regarding these results, please do not hesitate to contact this office.

Very truly yours,

Daniel W. Stone,
Assistant Sanitary Engineer

ATTACHMENT

cc Mr. Howe - Dept. of Transportation

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH CENTER

RESULTS OF EXAMINATION
(PAGE 1 OF 2)

REPORTING LAB: 10 GRIFFIN LAB
LAB ACCESSION NO: 01087 YR/MO/DAY/HR SAMPLE REC'D: 73/03/22/10
PROGRAM: 151
STATION (SOURCE) NO:
DRAINAGE BASIN: 06 NY GAZETTEER NO: 1265 COUNTY: DELAWARE
COORDINATES: DEG ' "N. DEG ' "W
COMMON NAME INCL SUBW'SHED: SIDNEY NEARCO RD #44REST AREA FOR DOT I88
CONT 9357.06 WELLS BRIDGE
EXACT SAMPLING POINT: TEST WELL 2C
TYPE OF SAMPLE: 12 WATER, DRILLED WELL
MO/DAY/HR OF SAMPLING: FROM 00/00 TO 03/21/16
REPORT SENT TO: CO (1) RO (1) LPHE (2) LHO (0) FED (0)

	PARAMETER	UNIT	RESULT	NOTATION
00100	COLOR(APPARENT)		0.	
00200	TURBIDITY J.T.U.		0.5	LT
00300	ODOR, HOT		1.0012	
00501	AMMONIA NITROGEN AS N	MG/L	0.02	LT
00601	ALBUMINOID NITROGEN AS N	MG/L	0.02	LT
00709	NITRITE NITROGEN AS N	MCG/L	1.	LT
00801	NITRATE NITROGEN AS N	MG/L	.1	
00901	OXYGEN CONSUMED	MG/L	0.2	
01001	CHLORIDES	MG/L	1.	LT
01101	HARDNESS, TOTAL AS CACO3	MG/L	98.	
01501	ALKALINITY, MTH OR AS CACO3	MG/L	93.	
01900	PH (LABORATORY)		7.6	
10001	IRON	MG/L	0.03	

DATE COMPLETED: 4/18/73

NEW YORK STATE DEPT. OF HEALTH
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P.O. BOX 459 UPPER WEST ST.
ONEONTA NEW YORK 13820

ATTENTION OF: STONE

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH CENTER

RESULTS OF EXAMINATION
(PAGE 2 OF 2)

REPORTING LAB: 10 GRIFFIN LAB
LAB ACCESSION NO: 01087 YR/MO/DAY/HR SAMPLE REC'D: 73/03/22/10
PROGRAM: 151
STATION (SOURCE) NO:
DRAINAGE BASIN: 06 NY GAZETTEER NO: 1265 COUNTY: DELAWARE
COORDINATES: DEG ' "N. DEG ' "W
COMMON NAME INCL SUBW'SHED: SIDNEY NEARCO RD #44REST AREA FOR DOT I88
CONT 9357.06 WELLS BRIDGE
EXACT SAMPLING POINT: TEST WELL 2C
TYPE OF SAMPLE: 12 WATER. DRILLED WELL
MO/DAY/HR OF SAMPLING: FROM 00/00 TO 03/21/16
REPORT SENT TO: CO (1) RO (1) LPHE (2) LHO (0) FED (0)

	PARAMETER	UNIT	RESULT	NOTATION
010201	MANGANESE	MG/L	0.03	
010701	SODIUM	MG/L	5.8	
100300	ODOR. COLD		1.0012	
001201	HARDNESS. CALCIUM AS CACO3	MG/L	77.	
002001	TOTAL DISSOLVED SOLIDS	MG/L	129.	
100100	COLOR (TRUE)		0.	

DATE COMPLETED: 4/18/73

NEW YORK STATE DEPT. OF HEALTH
ONEONTA DISTRICT OFFICE
P.O. BOX 459 UPPER WEST ST.
ONEONTA NEW YORK 13820

ATTENTION OF: STONE

00986
LRI